

Sub E

(b) dispensing polymers from the array of dispensing units onto the surface at the localized areas to produce an array of at least 100 polymers.

167. The method of claim 166 wherein the polymers are dispensed as droplets of 5 nl or less.

168. The method of claim 166 wherein the polymers are dispensed onto localized areas smaller than 1 cm².

169. The method of claim 166 wherein the polymers are allowed to attach directly or indirectly to the surface of the support at the localized areas.

D/Cn

170. The method of claim 166 further comprising the step of contacting the dispenser to the surface of the support.

171. The method of claim 166 wherein the polymer comprises a nucleic acid, oligonucleotide, polynucleotide, peptide, polypeptide, presynthesized polymer, polyurethane, polyester, polycarbonate, polyurea, polyamide, polyethyleneimine, polyacetate, receptor, enzyme, antibody, catalytic polypeptide, hormone receptor, or opiate receptor.

172. The method of claim 166 wherein the polymer comprises at least 2 monomers.

173. The method of claim 166 wherein the polymer comprises greater than 100 monomers.

174. The method of claim 166 wherein the polymer comprises 2, 3, 4, 5, 6, 10, 15, 20, 30, 40, 50, 75, or 100 monomers.

175. The method of claim 166 wherein the support is selected from the group consisting of substantially flat substrates, substrates having raised or depressed regions, beads,

gels, sheets, particles, strands, precipitates, spheres, containers, capillaries, pads, slices, films, plates, and slides.

176. The method of claim 166 wherein the support comprises a gel.

177. The method of claim 166 wherein the support comprises biological materials, nonbiological materials, organic materials or inorganic materials.

178. The method of claim 166 wherein the support is a disc, square, or circle.

179. The method of claim 166 wherein the localized area is smaller than 1mm².

180. The method of claim 166 wherein the localized area is smaller than 0.5mm².

181. The method of claim 166 wherein the localized area is smaller than 10,000 μm^2 .

182. The method of claim 166 wherein the localized area is smaller than 100 μm^2 .

183. The method of claim 166 wherein an array of at least 1,000 polymers is formed.

184. The method of claim 166 wherein an array of at least 10,000 polymers is formed.

185. The method of claim 166 wherein an array of at least 100,000 polymers is formed.

186. The method of claim 166 wherein an array of at least 1,000,000 polymers is formed.

187. The method of claim 166, wherein the array includes at least 1000 different polymers occupying localized areas within 1 cm² of the surface of the support.

188. The method of claim 166, wherein the support comprises glass, derivatized glass, pyrex, quartz, a polymeric material, polystyrene, polycarbonate, silicon or a gel.

189. The method of claim 166 wherein the array of dispensing units comprises a manifold of a plurality of delivery lines.

190. The method of claim 166 wherein the array of dispensing units comprises an array of pipettes.

191. The method of claim 166 wherein the array of dispensing units comprises a series of tubes.

192. The method of claim 166 wherein the array of dispensing units includes control valves.

193. The method of claim 166 wherein the polymer is bound indirectly to the surface of the support via a linker molecule.

194. The method of claim 166 wherein the localized areas are spaced less than about 3 mm apart.

195. The method of claim 166 wherein the localized areas are spaced less than between about 5 microns and 100 microns apart.

196. The method of claim 166 wherein the localized areas has an angular relation between each localized area of about 1 degree.

197. The method of claim 166 wherein the localized areas has an angular relation between each localized area of about 0.1 degree.

198. The method of claim 166 wherein the support comprises at least about 1000 localized areas.

199. The method of claim 166 wherein the support comprises at least about 10,000 localized areas.

200. The method of claim 166 wherein the support comprises at least about 1000 localized areas per cm^2 of surface of substrate.

201. The method of claim 166 wherein the support comprises at least about 10,000 localized areas per cm^2 of surface of substrate.

202. The method of claim 166 wherein the support comprises a strand including one or more of glass, derivatized glass, quartz, or a polymeric material.

203. The method of claim 166 wherein the surface of the support comprises a hydrophilic substance.

204. The method of claim 166 wherein the surface of the support comprises a hydrophobic substance.

205. The method of claim 166 wherein the surface of the support comprises a hydrophilic substance and a hydrophobic substance.

206. The method of claim 166 wherein the surface of the support comprises a photoresist.

207. The method of claim 166 wherein the surface of the support is cleaned prior to the step of dispensing a polymer. --